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UNEP/Global Resource Information Database-Geneva

Second GEO Data Working Group (DWG) Meeting

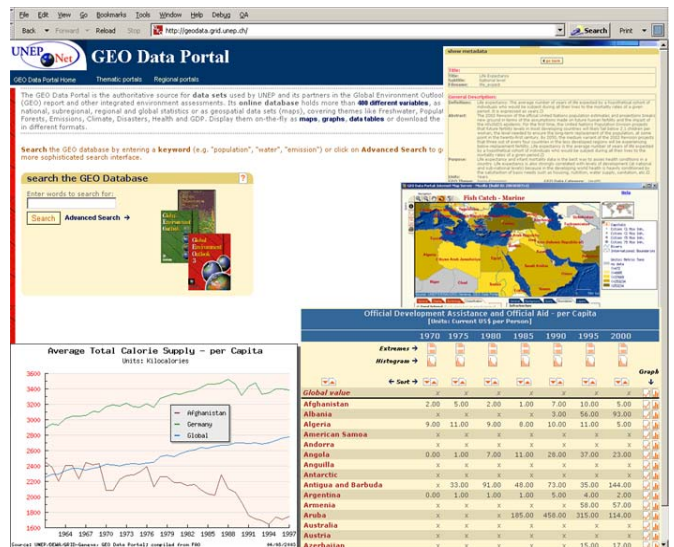
The second meeting of the GEO Data Working Group took place at UNEP's International Environment House in Geneva on 16-17 June 2003. This follows its first formal session in December 2001, and builds on various issues related to integrated environment assessment and the Global Environmental Outlook (GEO) in particular.

The DWG is one of the most active working groups supporting the GEO process, and has catalyzed significantly improved data input to and illustrations in GEO reports with real data in the form of statistics, graphs and maps. The major objectives of the DWG are to identify GEO-related data needs and gaps, help set the global environmental data collection and observation agenda among UN & affiliated agencies, and more specifically, guide the development of practical, 'hands-on' data tools for all those participating in the GEO and related reporting processes. A good example of such a tool is the GEO Data

Portal, that was initiated at the start of the third GEO assessment in 2000, and now has matured into the *de facto* reference database for GEO and related environment assessment and reporting.

The major purposes of the DWG meeting were to:

- 1- come to a consensus and finalise the "core data sets-to-indicators" matrix for use by UNEP and its Division for Early Warning and Assessment (DEWA) in the GEO process and other integrated environmental assessments; and
- 2- examine regional needs and prepare a



A few sample outputs of the new version of the GEO Data Portal

development strategy for regional manifestations of the GEO Data Portal, including all related issues such as basic design, harmonisation and interoperability.

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Iraq and Mesopotamian Marshlands Roundtable

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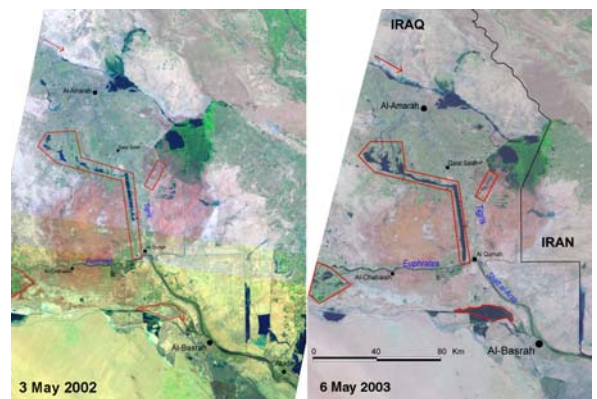
DEWA-Europe participated in the PCAU-organised roundtable on Iraq and the Mesopotamian marshlands at UNEP's International Environment House in Geneva on 23 May. Some 50 participants attended the meeting including from international NGOs, academic and research institutes, development agencies, and UN organisations.

A presentation about environmental change in the Mesopotamian marshlands was made by DEWA-Europe, including an updated assessment of recent developments based on analysis of the latest satellite imagery acquired in April/May 2003. These new images reveal streams nourishing the marshlands back to life and drainage canals swollen by an increase in water levels. Formerly dried-out areas have been inundated as floodgates have been opened, embankments breached and dams emptied upstream.

Meanwhile, new challenges - including the staking of agricultural claims on dried land and concern that resuscitating the marshlands will also revive malaria and other water-borne diseases - will need to be taken into account in restoration proposals to return the Marshlands to their original state.

The meeting emphasised the need for the most coherent and effective collaboration possible between partner organisations. Participants welcomed UNEP's offer to establish an Internet-based information gateway on issues and projects related to the Marshlands.

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These Landsat 7 satellite images contrast changes (highlighted in red) in May 2002 and May 2003, when spring snowmelt in the highlands of Anatolia and Zagros mountains typically cause the Tigris and Euphrates Rivers to flood, and the marshlands to reach their maximum extent.

Project on Drought Identification

In Europe, physical drought is causing significant ecological and economic impacts. Drying out of rivers threatens the ecological balance, grasslands are less productive, crops are drying in the fields, and dry conditions are favouring higher occurrence and magnitude of forest fires. In other parts of the world, repetitive drought events are causing soil desiccation leading to desertification. When sometimes combined with an unfavourable socio-economic context and tense political situation, these can even trigger major famines, this complex hazard being the biggest killer, ahead of epidemics (e.g. AIDS or malaria). These overwhelming observations justify the undertaking of research on identification of past drought events, thus allowing the computation of trends and predictions.

DEWA~Europe, through its Project for Risk Evaluation, Vulnerability, Information and Early Warning (PREVIEW, www.grid.unep.ch/preview) has already been involved in

modelling and mapping natural hazards (such as floods, cyclones, forest fires, volcanoes), one of the most challenging issue being the case of drought. The event itself is difficult to depict because of the complexity of the food insecurity process. Whereas floods can be easily mapped on a temporal basis, the physical limits of drought are more difficult to ascertain.

Research by DEWA~Europe involving the International Research Institute for Climate Prediction (IRI) was conducted during the elaboration of the Disaster Risk Index developed for the United Nations Development Programme (UNDP/BCPR). The two partners are now renewing their collaboration to refine their analysis for identifying past drought magnitude and extent, as well as socio-economic parameters that turned lack of precipitation (physical drought) into a famine. The purpose of the present research is firstly to achieve a simplified model as

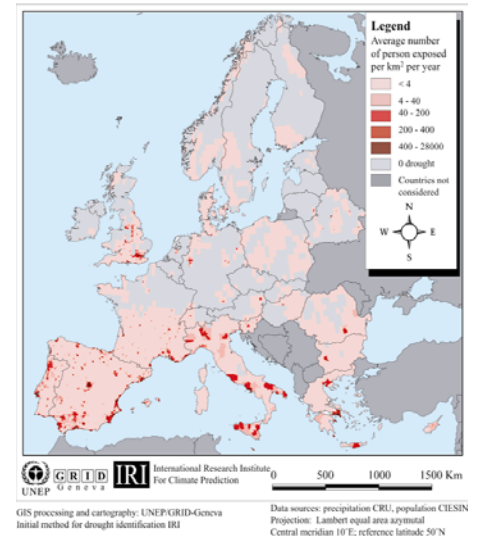
a first step for drought identification, allowing evaluation of affected population. Then, using statistical analysis, it is possible to highlight links between the socio-economic context (presence of conflict, low GDP, ...) and the number of casualties.

Data on precipitation decrease, elevation, slopes, temperature, wind, soil type, irrigation capacity as well as crop type are needed to achieve a first estimation on the identification of areas that can be affected by drought. Globally-detailed data for modelling purpose are not yet available, although data continue to be improved, and new data are becoming accessible.

Even if a complete understanding of physical drought could be

achieved, it would not reflect the risk of dying from food insecurity. However, this is a first step and more work is necessary to achieve a better understanding of casualties resulting from food insecurity. ■

Population exposed to drought events in Europe (1980 - 2000)



Landsat-based Land Cover Mapping of Huascarán National Park (Perú)

Considering its outstanding landscape and great variety in fauna and flora along with remarkable ecological characteristics, the Cordillera Blanca in the Ancash Department in Perú, was designated as "Huascarán National Park" in 1975. It was later internationally recognised as a Biosphere Reserve under UNESCO's Man and the Biosphere program in 1977 and inscribed on the World Heritage List in 1985.

Contrasting human activities take place within the park and its buffer zone: traditional agriculture and pastoralism, tourism and mountaineering, as well as mining development. These activities are potentially conflicting, for they compete for space and water resources, in a relatively harsh and fragile high-altitude environment, under the additional stress of severe

natural hazards and changing climatic conditions. Satellite imagery is a precious source of information on the temporal evolution of land cover, providing a timely inventory of key parameters for resource management and habitability such as snow and ice cover, natural hazard occurrences and environmental impact of mining activities.

DEWA~Europe hosted Walter Silverio, a Peruvian PhD student at the Remote Sensing Unit, University of Geneva, to help him finalise a land cover analysis of the Huascarán National Park. Landsat-5 TM imagery was used to map the distribution of land cover, and the influence of the rugged topography on image radiometry was reduced by using the NDVI and NDSI indices. Fourteen radiometric classes were defined through a segmentation of the indices' histograms, taking into

consideration the slope orientation, and the classes thematic labelling was established using field data. The land cover map provides information on the extent of the glaciers and till deposits, the turbidity of over 400 lakes and the vegetation density. As such, it should contribute towards better management of this national park and UNESCO human heritage site.

Preliminary results of this study were outlined in UNEP/WCMC's first "Mountain Watch" Report in 2002, as part of the International Year of Mountains. The complete study is published in volume 3, number 1, of the francophone "Téledétection" journal. ■

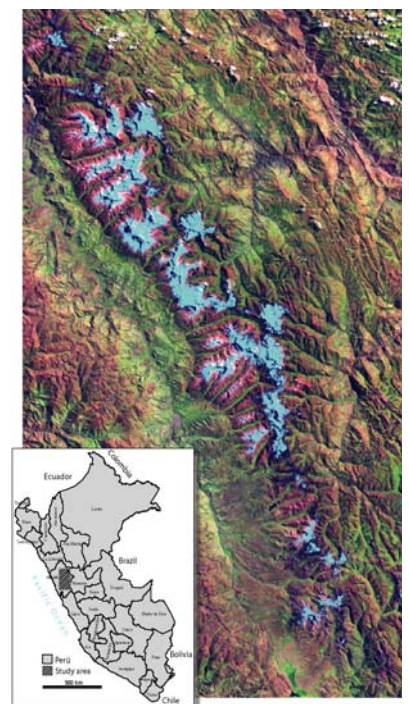


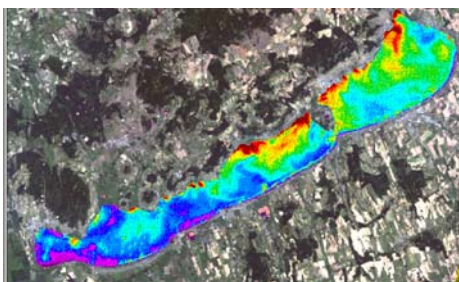
Photo: August 1996 Landsat 5 false color composite of the Cordillera Blanca, Huascarán National Park

Lake Balaton Steering Committee

On behalf of DEWA~Europe, Hassan Partow participated in the first Steering Committee Meeting for the Lake Balaton integrated vulnerability assessment and adaptation strategies project in Siofok, Hungary on 6-8 April. The meeting was hosted by the Lake Balaton Development Coordination Authority, and attended by Dr. Laszlo Pinter from the International Institute

for Sustainable Development, and Dr. Norberto Fernandez from DEWA~Nairobi.

A series of stakeholder consultations were also held with local partners in the Lake Balaton area, as well as with government representatives in Budapest to inform and solicit their inputs in the development of the project concept. A follow-up meeting was also held with Mr. Nick Remple, UNDP Regional Global Environment Facility (GEF) Coordinator for Biodiversity and International Waters in Bratislava, Slovakia, on 9 April to discuss potential GEF support for the Lake Balaton project. ■

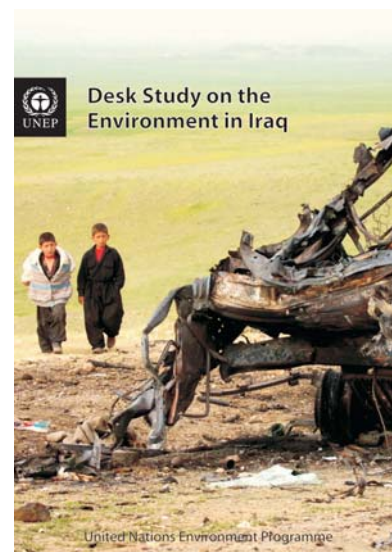


Landsat TM image of 2 August 2000 showing water turbidity patterns (false color, TM2) on Landsat true colour composite.

Iraq and Mesopotamian Marshlands Roundtable

(Continued from page 1)

The roundtable followed the publication in April 2003 of a new report by UNEP on environmental conditions in Iraq offering a preliminary assessment of the main environmental threats facing the country and recommending actions for immediate relief and longterm recovery. Another priority activity should be conducting a scientific assessment of pollution hot spots, including from weapons containing depleted uranium (DU). DEWA~Europe prepared a suite of maps and satellite images for this report. ■



The UNEP Desk Study on Environment in Iraq was prepared by UNEP's Post Conflict Assessment Unit as a contribution to international efforts to provide humanitarian assistance to Iraq.

UNEP's "Environment And Security" Initiative Launched at Kiev Conference

Ministers of Environment from the pan-European region and North America gathered in Kiev, Ukraine, for the 5th Ministerial Conference on "Environment for Europe (EfE)" 21-23 May and held under the aegis of the UN Economic Commission for Europe's Committee on Environmental Policy. DEWA~Europe was fully involved in this event through a number of activities, including joint work with the European Environment Agency (EEA) on the Kiev Report ("Europe's environment: the third assessment"), as well as a new initiative on "Environment and Security" in Central and Eastern Europe, launched at EfE-Kiev jointly with OSCE and UNDP.

The "Env&Sec" initiative was first undertaken during the second half of 2002, as conceived by UNEP's Regional Office for Europe (ROE) and supported by DEWA~Europe. The purpose of this project, is to identify linkages between major environmental concerns or issues within European sub-regions and countries, and existing or potential security problems that impact on people and states.

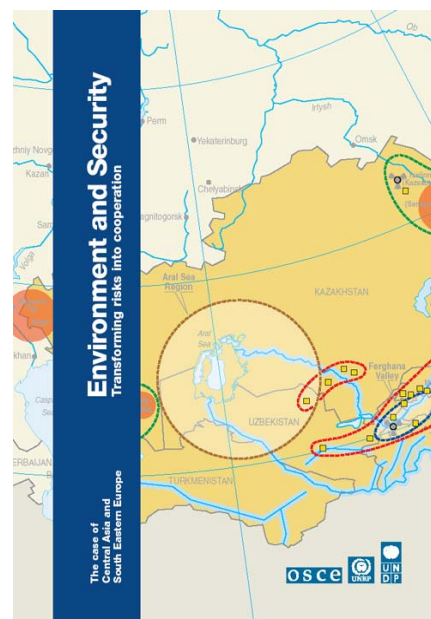
Environmental concerns relating to shared natural resources range from threats to biodiversity and human health and livelihoods, to land degradation and international waters. Other issues are obsolete and polluting industrial and waste sites, including nuclear ones, and their impacts either locally within countries or especially as trans-boundary phenomena.

GRID-Geneva has been involved in this initiative at the conceptual, managerial and technical levels (active member of the steering committee and cartographic production). Visual products created serve to highlight existing environmental concerns and issues, including "hot spots" and impacts that can lead to problems and tensions between peoples and/or states. Among these, a unique map product was prepared that illustrates relevant policy measures (conventions, treaties, etc.) already in place, so that gaps in policies could be more easily identified.

Posters of the SEE sub-region as well as a similar set for the other test sub-region Central

Asia were prominently displayed at the joint EEA-UNEP exhibition stand at the EfE Conference. The launch of the initiative took place in the presence of ministers of environment, the invited press and public. The report of the pilot phase of the Env&Sec project including written inputs from DEWA~Europe entitled "Transforming risks into cooperation ~ the case of Central Asia and Southeastern Europe" was widely distributed.

Because the "Env&Sec" project was well-received by many governments and other potential funding bodies (such as NATO), it is planned to extend the work to other Central and Eastern European sub-regions such as the Caucasus. Plans and proposal development are now underway to assure that a similar result can be achieved where such an activity could be beneficial.



The "Environment and Security: Transforming Risks into Cooperation" UNEP, UNDP and OSCE joint report cover

Finally, through UNEP's DEWA headquarters in Nairobi, the possibility of expanding the Env&Sec project to other regions of the world is being explored. ■

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Calendar of Events

(July – September 2003)

1 - 4 July

DEWA Coordination, Programme Planning and Implementation meeting; UNEP Headquarters, Nairobi, Kenya

5 - 6 July

"Nuit de la Science", Geneva, Switzerland

22 - 26 July

Lake Balaton Integrated Vulnerability Assessment steering committee meeting and field visit to/with partners; Siofok and Budapest, Hungary

5 August

Signature of Letter Of Agreement between DEWA-Europe and the Center for Hazard and Risk Research, Earth Institute at Columbia University for collaboration on Risk and Vulnerability assessment through "HOTSPOTS" project, Geneva, Switzerland

27 August - 5 September

First HOTSPOTS working group session with partners from Columbia University and the World Bank, Geneva, Switzerland

3 - 5 September

UN Economic Commission for Europe (ECE) Working Group on Environmental Monitoring (WGEM) and related "brainstorming" meeting, Geneva, Switzerland

21 - 25 September

3rd Conference on "Digital Earth ~ Information Resources for Sustainability"; Brno, Czech Republic

29 - 30 September

DEWA Early Warning strategy preparation meeting of experts; Geneva, Switzerland



Second GEO Data Working Group (DWG) Meeting

(Continued from page 1)

The overall and regional participation at the meeting was broad and comprehensive and included most of the participants in the previous GEO DWG meeting (Dec. 2001), with various new or additional persons for DEWA regional representatives in Africa, Asia & Pacific and Latin America and Caribbean, plus UNEP GEMS-Water, UN Statistical Division (UNSTAT or UNSD) and World Resources Institute (WRI) all as close partners of UNEP/DEWA in the field of environmental data. The meeting was chaired by Ron Witt with assistance from Jaap van Woerden (both DEWA/GRID-Gva) and Volodymyr Demkine of DEWA Hqtrs in Nairobi.

The two-day DWG meeting reviewed the existing draft GEO Data/Indicators matrix and made recommendations for further improvements and updates of the same, and how to proceed with endorsement of the matrix within DEWA and the GEO user community as a basic and guiding list for data sets to be collected, compiled and made available. Priority global and regional data gaps and shortcomings were revisited, with the aim to better cooperate

with key data partners to collect and compile the data needed for GEO-related reporting.

The meeting explored the possibilities to further develop the GEO data process in terms of regional versions of the (global) GEO Data Portal. It discussed various practical and technical issues with regard to maintaining overall compatibility and harmonization, while allowing for region-specific perspectives and requirements, as well as integration of already existing (sub-)regional data systems such as available in Latin America and the Caribbean or African regions.

The DWG meeting assigned two sub-groups, one to further elaborate the Data/Indicators matrix, identify priority data gaps and propose ways to address these in cooperation with partners, and one to tackle various practical issues and pave the way for development of globally harmonized, region-specific versions of the GEO Data Portal in the near future. The next DWG meeting will be scheduled in late 2003 or early 2004. ■

EEA-USEPA Cooperation on Ecoinformatics Meeting

A two-day meeting on ecoinformatics, focusing on cooperation between the European Environment Agency and US-EPA for exchange of experiences in the area of environmental information was organized in Copenhagen on 18-20 June 2003. The meeting also discussed increasing efficiency of environmental information gathering and provision, and bringing added value to efforts to protect the environment. The meeting was split into two workshops, one on web services and IT developments, and the other on environment and health indicators.

DEWA~Europe participated in the workshop dedicated to the future need for indicators on environment, health and sustainable development. Jaap van Woerden presented the

Global Environmental Outlook history, process and products, as well as possible links with the Millennium Development Goals and the World Summit on Sustainable Development - particularly in Water, Energy, Health, Agriculture and Biodiversity issues. Information was also given on relevant data/indicator-related activities such as those through the GEO Data Working Group and the GEO Data Portal.

The final plenary session mentioned *inter alia* that indicator development in the area of sustainability could focus on environment and health, and stressed the importance of spatial dimensions as well as connections and integration with UNEP's GEO process. ■